

57. A computer system comprising means for operating a method according to claim 24.

58. A computer program comprising computer readable program code for executing a method according claim 29.

59. A program storage device readable by a machine and encoding a program of instructions for executing the method according to claim 29.

60. A computer system comprising means for operating a method according to claim 29.

REMARKS

The claims have been amended and several substituted to remove multiple dependent claims and to conform to U.S. Patent Office practice. Please enter this amendment before calculating the filing fees.

Respectfully submitted,



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Marked-up Rewritten Claims

5. (Amended) A method according to claim 1 [any preceding claim], wherein the modification of operation (ii) is selected from a database of possible modifications.

8. (Amended) A method according to claim 5 [any one of claims 5 to 7], wherein the criteria is cost and the modification operation (ii) proposes a modification selected from a database of possible modifications and their associated costs, wherein the selected modification is the modification providing the smallest decrease in costs from the current proposal.

9. (Amended) A method according to claim 1 [any preceding claim], wherein said at least one predetermined operating parameter includes one or more of a maximum acceptable hydraulic gradient, minimum and maximum permissible pressures specified for elements of the network, minimum and maximum flow rates through particular elements of the network, minimum tank levels and minimum and maximum permissible pipe sizes.

11. (Amended) A method according to claim 1 [any preceding claim], wherein the starting proposal is selected as the proposal offering the greatest optimisation of said predetermined criteria from a database of possible proposals available for consideration.

12. (Amended) A method according to claim 11 [or claim 12], wherein said starting proposal is taken as an initial starting proposal and further comprising the operations of:

- a) performing a first revision of the initial starting proposal to revise the proposal for at least some of the pipes in the pipe list to a proposal less likely to result in a violation of said predefined operating limit;
- b) performing a network analysis of said at least one predetermined operating parameter of the network to predict whether the predefined operating limit will be violated on the basis of said first revision;
- c) if said network analysis predicts a violation of said predefined operating limit, then performing a second revision of the starting proposal for each pipe in the

list, said second revision comprising adopting a proposal for each pipe which is least likely to produce a violation in said predefined operating limit from the possible proposals available for consideration.

14. (Amended) A method according to claim 12 [or claim 13], wherein in performing said first revision the proposal for each of the pipes in the pipe list is revised by proposing an increased size for each pipe compared to the size proposed for the initial starting proposal.

16. (Amended) A method according to claim 1 [any preceding claim], wherein the list of pipes comprises every pipe in the network model.

17. (Amended) A method according to claim 1 [any one of claims 1 to 15], wherein the list of pipes comprises a selection of pipes from the network model.

19. (Amended) A method according to claim 17 [or claim 18], wherein the pipe list is compiled by performing a filter operation on the full pipe list to select pipes satisfying specified filter conditions.

20. (Amended) A method according to claim 1 [any preceding claim], wherein said network model is a part of a larger network or network model.

21. (Amended) A method according to claim 1 [any preceding claim], wherein the network modelled is a water supply and/or distribution network.

23. (Amended) A method according to claim 1 [any preceding claim], wherein said predetermined criteria is the cost of installing or rehabilitating pipes within the network, or of operating the network.

27. (Amended) A method according to claim 24 [anyone of claims 24 to 26], wherein the instance count is made by considering each node defined by the network model in turn and the pipe or pipes which converge or terminate at each node, and increasing the instance count for each pipe occurring at least once in a flow path to that node through the or each pipe terminating or converging at that node.

28. (Amended) A method according to [any one of] claim[s] 24[ to 26], wherein the instance count is made by considering each pipe in turn and implementing the instance count for each pipe occurring at least once in a flow path through the selected pipe.

33. (Amended) A method according to [any one of] claim[s] 30 [to 32], wherein the network peak flow demand is determined by estimating the through flow through each pipe tree branch required to meet network demand downstream of the branch, giving a branch through flow demand, and for each pipe summing the branch through flow demand for each branch of which that pipe is a part to arrive at the network peak demand for that pipe.

36. (Amended) A computer program comprising computer readable program code for executing a method according claim 1 [any preceding claim].

37. (Amended) A program storage device readable by a machine and encoding a program of instructions for executing the method according to [any one of] claim[s] 1 [to 35].

38. (Amended) A computer system comprising means for operating a method according to [any one of] claim[s] 1 [to 35].